The projects of 5th stage

By: Inaam Ahmed Ameen

1-Melatonin the hormone of darkness:قاسم علي عباس

**Melatonin(***N*-acetyl-5-methoxy tryptamine) is also known as the hormone of arkness*,*  Melatonin is produced naturally from the amino acid tryptophan, secreted into the blood stream and carried by the circulation from the brain to all parts of the body.  Its production is influenced by the detection of light and dark by the [retina](https://www.britannica.com/science/retina) of the [eye](https://www.britannica.com/science/human-eye). Melatonin helps to regulate biological rhythms such as sleep and wake cycles, providing circadian and seasonal signal to the body, in addition it has anti-inflammatory ,antioxidant ,anti-coagulopathic properties, antiaging, endothelial protective effects, immune-stimulant also It stimulates synthesis of collagen fibers and bone formation.

2- Osteocalcin as a multifunctional hormone:علي عماد احمد

 osteocalcin is secreted solely by osteoblasts but only has minor effects on bone mineralization and density. Instead, it has been reported to control several physiological processes in an endocrine manner, such as glucose homeostasis and exercise capacity, brain development, cognition, and male fertility. a new line of research has emerged in recent years, suggesting that osteoblasts secrete factors possessing hormonal function and are thereby able to control other organs.

3- Hashimoto's Thyroiditis: مينا مهند عبدالائمة

Hashimoto's [thyroiditis](https://www.medicinenet.com/thyroiditis/article.htm) (chronic lymphocytic thyroiditis) is an autoimmune disorder that causes inflammation of the thyroid gland. Symptoms of Hashimoto's thyroiditis are the same as hypothyroidism, typically shows an increased number of antibodies against thyroid-specific proteins, including thyroperoxidase and thyroglobulin. T lymphocytes, invade the thyroid gland cause silent, painless inflammation that destroys it; ultimately, the individual produces little or no thyroid hormone and becomes hypothyroid.